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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/046,871      | 01/15/2002  | Kenneth A. Ostrom    | PD-99W192           | 5473             |

7590 10/04/2002

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EXAMINER

WAMSLEY, PATRICK G

ART UNIT PAPER NUMBER

2819

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

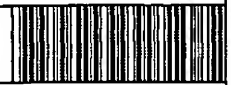
# Office Action Summary

Application No.  
10/046,871

Applicant(s)  
Ostrom et al

Examiner  
Patrick Wamsley

Art Unit  
2819



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

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## DETAILED ACTION

### *Information Disclosure Statement*

Receipt is acknowledged of IDS papers, filed on 01/15/2002.

### *Specification*

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Rejections - 35 U.S.C. § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S.

Patent 5,926,123 to Ostrom et al, hereafter Ostrom.

For claim 1, Ostrom shows a calibration method for an analog-to-digital converter (ADC) comprising the steps of applying an input signal; determining error values for each stage; and using the error values for ADC compensation. Claim 9 presents these method limitations in apparatus format. For claim 13, Ostrom also examines statistics of bit transitions.

For claims 2, 9, and 13, Ostrom has fine and coarse ADC stages.

For claims 3 and 13, Ostrom examines statistics of bit transitions.

For claims 4 and 10, Ostrom computes probability density functions.

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For claim 5, Ostrom determines deviation from an ideal transfer function, thereby correcting gain and offset errors.

For claim 6, Ostrom uses this deviation to determine error values.

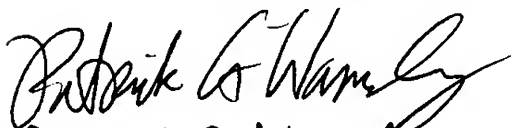
For claims 7 and 11, Ostrom adds error values to the analog input.

For claims 8 and 12, Ostrom adds error values to a reference analog input.

*Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 4,354,177 to Sloane uses histograms, measures of probability distribution, during ADC calibration. U.S. Patent 5,465,092 to Mayes et al shows an ADC with correction for gain and offset errors. U.S. Patent 5,499,027 to Karanicolas describes recursive calibration for a multi-stage ADC. U.S. Patent 6,111,529 to Maulik et al cancels ADC offset errors during gain calibration.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (703) 305-3504. Send facsimiles to (703) 308-6251.

  
Patrick G. Wamsley  
September 27, 2002